Section 1. INTRODUCTION

1.1 Background

The Colorado River Basin Region (Region 7) covers 13 million acres (20,000 square miles) in the southeast corner of California. It includes all of the Imperial County, and portions of San Bernardino, Riverside and San Diego Counties. The Region is bordered to the east by the Colorado River; to the south by the Republic of Mexico; to the west by the Laguna, San Jacinto, and San Bernardino Mountains, and to the north by the New York, Providence, Granite, Old Dad, Bristol, Rodman, and Ord Mountain Ranges. Region 7 includes 28 major watersheds or "hydrologic units", and has water bodies of statewide, national, and international significance (e.g. the Salton Sea and the Colorado River).

The Watershed Management Initiative (WMI) is an integrated planning process that effectively utilizes staff and grant resources, to prevent and control water pollution on a watershed scale, while meeting regulatory program mandates. The State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs), in partnership with the U.S. Environmental Protection Agency (USEPA), have agreed to develop and implement this integrated planning process.

This Chapter is a planning tool that identifies priorities, baseline expenditures, and needs for additional resources in the Colorado River Basin Region. It is the blueprint for meeting regional water quality protection and improvement goals/objectives. The Chapter identifies funded and unfunded activities. Watershed strategies and priorities are presented to obtain support for unfunded activities, and are provided in a format adaptable to Budget Change Proposals (BCPs).

The Chapter provides a framework to identify priorities and resource needs to support formal commitments made in annual fund-source, and program-specific work plans. Determining which activities are funded by specific work plans will be negotiated using information in this chapter. Annual program work plans and grant applications will be prepared by program managers to identify activities funded in a particular year based on fiscal decisions. The chapter is not a commitment to complete work.

Ultimately, the WMI Chapter describes the management strategy that the Region plans to implement. It explains how and why organizational goals and priorities were established, and describes strategies used to achieve water quality goals. The Chapter contains a baseline budget for the current year and estimated budget for future years.

1.1 Strategic Plan – The Watershed Management Initiative

The State and Regional Boards completed a strategic plan in 1995 and revised it in 1997. The current strategic planning process was launched after release of the California Environmental Protection Agency (CalEPA) Strategic Vision (10/00), using the CalEPA document and the previous strategic plan as reference points. The concept that water quality problems and solutions should be considered on a watershed basis has continued in the latest Strategic Plan (11/2001). It is the intent of the WMI process to integrate various RWQCB, SWRCB and USEPA programs and direct management efforts toward solving water resource problems on a watershed basis. This chapter describes the approach to watershed planning used by Region 7, and serves as a tool for budgetary decisions.

1.2 Definition of Watershed Management Areas

For the purpose of implementing the WMI in Region 7, watershed management areas are defined on three levels: 1) the entire Colorado River Basin Region, 2) sub-regional watersheds, and 3) drainage basins. This categorization provides a means to identify problems and remedies at the most effective level.

Level 1, Entire Colorado River Basin Region: Region wide activities described in Section 3 are implemented at this broad level of watershed management.

Level 2, Sub-regional Watersheds: Sub-regional watersheds are defined by broad geographic boundaries. Region 7 is divided into three sub-regional watershed management areas: 1) Salton Sea Transboundary Watershed, 2) Lower Colorado River Watershed, and 3) Desert Aquifers Watershed (Figure 1).

Level 3, Physical Drainage Basins Within Sub-regional Watersheds: An example of this level is the Alamo River watershed, which is a physical drainage basin located within the Salton Sea Transboundary Watershed Management Area. This management level lends itself to the development of Total Maximum Daily Loads (TMDLs), local stakeholder plans, and focused water quality monitoring activities.

The above three levels of watershed management were established to classify problems and water protection actions, and to focus appropriate control measures at the most appropriate geographic scale.

Figure 1. Sub-Regional Watersheds

1.3 Organization Structure and Management Strategy

Region 7 staff is organized into two divisions: Core Regulatory and Watershed Protection. Core regulatory programs carry out their program commitments, while Watershed Protection addresses planning and nonpoint source pollution issues. The main nonpoint source pollutants in Region 7 include agriculture, pollution in the New and Alamo Rivers from Mexico, septic tanks/leach fields, and nitrates from fertilization of golf courses/greenbelts. Watershed activities will be prioritized based on the severity of water quality impairment, beneficial uses, and potential to correct the problem. Staff will address priorities and protection actions throughout the Region, regardless of the watershed in which it occurs.

1.4 Overview of Regional Board Activities

There are a number of water quality protection programs implemented by the Regional Board that are integrated into the WMI process. These programs, and their function in the water quality protection strategy for Region 7, are discussed below. Specific program activities for each watershed management area are discussed in "Section 2 – Watershed Specific Activities", and region wide program activities are discussed in "Section 3 – Region Wide Activities".

A. Standards/Basin Planning

Colorado River Basin Region's *Water Quality Control Plan* (Basin Plan) is reviewed and updated as new data and information become available. California Water Code (CWC), Section 13240 requires Basin Plans be reviewed periodically. Clean Water Act (CWA), Section 303(c) requires states to review water quality standards every three years (Triennial Review), and to revise them as necessary. Triennial Review and planning issues are discussed in "Section 3 – Region Wide Activities."

B. Core Regulatory Program (NPDES, Non-Chapter 15, and Chapter 15)

One of the Regional Board's principal means of achieving water quality objectives, and protecting beneficial uses, is through the development, issuance, and enforcement of waste discharge requirements. The Regional Board may issue Federal National Pollutant Discharge Elimination System (NPDES) permits and Waste Discharge Requirements for discharges to surface waters from point sources and certain nonpoint sources (stormwater), or Waste Discharge Requirements for discharges to land. Core regulatory activities include issuing new permits; updating existing permits; compliance inspections; reviewing self-monitoring reports; responding to spills/complaints, and enforcement. Responding to appeals and/or litigation is a resource intensive activity. Most core regulatory activities are conducted at the region wide management level (level 1), although the NPDES program sometimes conducts activities at the sub-regional watershed level (level 2). For example, when a TMDL establishes a new waste load allocation for point sources, NPDES permits would be altered to meet TMDL allocations.

Core Regulatory activities for the next five fiscal years are shown in the following appendices:

- Appendix A – NPDES Major Permit Reissuance Schedule
- Appendix B – Stormwater Permit Reissuance Schedule
- Appendix C – Non-Chapter 15 Permit Reissuance Schedule
- Appendix D – NPDES Compliance Inspection Schedule
- Appendix E – NPDES Pretreatment Audit Schedule
- Appendix F – Chapter 15 Permit Reissuance Schedule

C. TMDLs

Section 303(d) of the CWA requires the State to update the list of water bodies with impaired water quality standards (i.e. water quality objectives and beneficial uses). The list includes impaired water bodies that cannot attain water quality standards by implementing technology-based controls, a description of pollutants causing impairment, and a schedule for developing a TMDL for each pollutant. A TMDL is the maximum load of a pollutant that can be discharged from point sources, nonpoint sources, and natural sources without impairing beneficial uses or violating water quality objectives. A TMDL must include waste load allocations for point sources, load allocations for nonpoint sources and natural sources, and a margin of safety. A TMDL can be divided into eight phases: (1)Definition of project; (2) Project Plan; (3) Data collection and analyses; (4) Preliminary progress report/study reports; (5) Project Report; (6) Basin Plan Amendment or other regulatory action; (7) State Board, OAL, and USEPA approval; and (8) Implementation.

The Regional Board updated the 303(d) list and TMDL development schedules in February 2003. The Region's 303(d) list contains six waterbodies, many impaired by multiple stressors, for a current total of 25 TMDLs. Appendix G, Table G-1, includes the schedule of TMDL activities; Appendix H, Table G-2, provides a detailed 5-year schedule.

Point sources are effectively controlled through implementation of the Regional Board's core regulatory program. Nonpoint source (NPS) discharges, primarily agricultural irrigation return flows, are the most significant source of pollutants in many of the surface waters. TMDLs are part of ~~the~~ Regional Board's strategy for assessing and controlling NPS contributions to pollutant loads.

TMDL development and implementation is integrated with other Regional Board programs. Strategies developed through the 1999 "Plan for California's NPS Control Program" will be utilized to develop effective TMDL implementation programs for NPS discharges. Modification of NPDES permits, watershed planning, and stakeholder involvement are also part of TMDL development and implementation.

C. California's NPS Pollution Control Program

Nonpoint source inputs are diffuse in origin and variable in quality. Pollution caused by agricultural practices, urban sources, hydro-modification, marinas, and recreational boating, are examples of NPS pollution. NPS pollution is the leading cause of water quality impairment in California. California's NPS Pollution Control Program has been in effect since 1988. The SWRCB updated the NPS Control Program in 1999, through adoption of the NPS Program Plan (Plan). This Plan sets forth 5-year and 15-year implementation plans, and enhances the State's efforts to protect water quality, and conform to the CWA Section 319 and Section 6217 of the Coastal Zone Act Reauthorization Amendments (CZARA). The NPS Implementation Plan is currently being revised. The State's long-term goal is to "improve water quality by implementing the management measures identified in the California Management Measures for Polluted Runoff Report (CAMMPR) by 2013." A key element of the Program is the "Three-Tiered Approach," in which self-determined implementation is favored, but more stringent regulatory approaches are utilized when necessary to achieve implementation. The Statewide NPS policy is cited in the Region 7 Basin Plan and serves as the regional NPS policy. Regional goals implemented as part of the State's 5-Year NPS plan are discussed under the appropriate watershed specific activities sections. The CAMMPR Report identified 61 "Management Measures" as goals for the control and prevention of polluted runoff. Appendix H lists the 61 Management Measures.

Managing NPS pollution is difficult and requires an array of control techniques customized to local watershed and economic conditions. The lack of funding, the difficulty locating sources, and lack of an established regulatory structure to address NPS discharges, adds to the complexity. In Region 7,

agriculture (Management Measure Category I) is the greatest threat to surface water, and onsite disposal systems (Management Measure Category 3.4B) is the greatest threat to ground water.

The Three-Tiered approach to NPS regulation include:

1. Self-determined implementation of Best Management Practices (BMPs);
2. Regulatory-based encouragement of BMPs; and
3. Effluent requirements.

Tiers are implemented on an as-needed basis, and may not be sequential.

The following are regional NPS control goals:

1. Implement applicable management measures by 2013.
2. Address international pollution in the New River.
3. Address agricultural NPS pollution in the Salton Sea Transboundary Watershed.
4. Develop a regulatory structure, utilizing the three-tiered approach.
5. Protect drinking water aquifers.
6. Implement a comprehensive monitoring, assessment, and reporting program.
7. Provide stakeholder outreach and education, and financial and technical assistance for water quality planning/NPS pollution control.

Further description of the Region 7 NPS control policy is provided in "Section 3 – Region wide Activities" and Appendix I.

D. New River/Mexicali Sanitation Project

The Regional Board is actively involved in clean up of the New River, and plays a significant role in proceedings to address international pollution. The Regional Board has monitored water quality of the New River since 1975. In 1995, USEPA provided funds to the Regional Board to monitor and document water quality at the International Boundary. The funds provide for monthly observation tours of discharge locations and wastewater facilities in the City of Mexicali, Mexico; monthly 8-hour monitoring and quarterly 24-hour monitoring of the New River at the International Boundary; coordination with the U.S. Section of the International Boundary and Water Commission (USIBWC); technical reviews of documents, plans and reports; and participation on the binational technical committee. These activities assess the improvements Mexican sanitation projects have on water quality in the New River at the Border. Monitoring data indicate the New River is impaired by pesticides, bacteria, silt, nutrients (nitrate, phosphate, etc.), trash, volatile organic compounds, and low dissolved oxygen.

E. Surface Water Quality Monitoring and Assessment

Requirements and Functions for Monitoring and Assessment

Water quality monitoring is a crucial activity in the SWRCB Strategic Plan and NPS Management Program. Monitoring assesses efforts to address pollution, establishes baseline data for development of TMDLs, and satisfies CWA Section 305(b) water body assessment requirements. Title 40 of the U.S. Code of Federal Regulations (40 CFR) Part 130.4 specifies, "States must establish appropriate monitoring methods and procedures (including biological monitoring) necessary to collect and analyze data on the quality of waters of the United States…"

Assessment Monitoring

Assessment water quality monitoring is conducted on a quarterly basis for all major surface waters, if funding is available. Assessment data is used to list impaired waters pursuant to CWA Section 303(d), as

baseline data for TMDL development, and for bi-annual CWA Section 305(b) Waterbody Assessment. Parameters evaluated include: pesticides (organochlorine, organophosphate, carbamate, and synthetic pyrethroids); nitrates; phosphates; volatile organic compounds; metals; dioxins; baseline parameters (temperature, pH, dissolved oxygen, etc.), and miscellaneous analytes of interest. Monitoring is conducted according to a Quality Assurance Project Plan (QAPP) that conforms with USEPA "Requirements for Quality Assurance Project Plans for Environmental Data Operations" (EPA QA/R-5, 2001). Assessment monitoring programs may be revised to account for temporal and spatial variations, or changes in constituents of concern.

SWRCB's Toxic Substances Monitoring Program (TSMP) evaluates fish tissue for the presence of contaminants and is a significant assessment monitoring activity in Region 7. Samples for TSMP are collected on an annual basis from strategic locations. These data detect contaminants that bioaccumulate in fish, and pose threats to aquatic species, fish-eating birds, and humans.

Intensive Monitoring Studies

Intensive studies are conducted when threats to beneficial uses are severe, or TMDLs are being developed/implemented. Intensive monitoring studies were conducted in 1999 and 2000 for development of the Pathogen TMDL and the Alamo River Silt/Sediment TMDL. Monitoring activities to develop TMDLs for the main tributaries to Salton Sea were preformed in 2001, 2002, and will continue into SFY 2003-2004. Similar to assessment monitoring, intensive studies use QAPPs that conform with EPA QA/R-5 2001.

Funding to monitor for constituents scheduled for TMDL development should be provided at least one year prior to the onset of activities. This ensures availability of data to build TMDL preliminary project report elements including baseline conditions, source analyses, waste load and load allocations. Regional Assessment Monitoring is often coordinated in conjunction with Intensive Monitoring Studies to optimize resources. Data generated through ambient monitoring and intensive studies (including documented procedures and "meta data") is available to stakeholders and the public (via reports, internet, etc.).

Regional Coordination of Monitoring Activities within the Priority Watershed

Regional Board staff hosted meetings for the Salton Sea Water Quality Technical Committee (WQTC). Several governmental and non-governmental organizations that generate water quality data, or evaluate the Salton Sea watershed, participated in the WQTC. Objectives of the WQTC are:

- Enhance collaboration regarding water quality data sharing, storage, and distribution;
- Develop common methods for water quality sampling and analytical work, to maximize data compatibility;
- Conduct collective, ongoing technical evaluation of water quality information for monitoring changes in Salton Sea and,
- Gain a better understanding and consensus on technical water quality issues in the Salton Sea watershed.

F. Ground Water

Ground water resources are the main source of drinking water in the Colorado Desert. The Coachella Valley aquifer supplies high quality drinking water to virtually all of the valley's rapidly growing population. Availability of high quality ground water is important in other areas within Region 7 including: Desert Hot Springs, Borrego Springs, Morongo Valley, Twentynine Palms, Joshua Tree, Yucca Valley, Lucerne Valley, and Desert Center. Nitrate concentrations in ground water exceed drinking water standards in some of these areas, causing temporary or permanent closure of several municipal supply

wells. Protecting these drinking water sources is as important as restoring impaired surface waters. Proposed activities for ground water protection are discussed in the appropriate watershed sections.

1.5 The Watershed Management Approach

Watershed planning approach for Region 7 involves the following basic components:

- Implementation of core regulatory programs to fulfill statutory mandates;
- Identification, evaluation, and prioritization of water quality problems;
- Development and implementation of water quality protection actions and goals;
- Public participation through stakeholder groups, and
- Measuring success.

1.6 Regional Priorities

In November 2002, the Regional Board's Executive Officer and Division Chiefs developed a ranking matrix to evaluate threats to water quality that stressors pose to beneficial uses. The following high priority issues were identified:

- *TMDLs*

- *Regional Implementation of the Region's Core Regulatory Programs Control and Reduction of International Pollution in the New River* (Salton Sea Transboundary Watershed): reduce pathogens, biological oxygen demand (BOD), and volatile organic compounds to meet water quality standards.

- *Control and Reduction of NPS Pollution in the Salton Sea Transboundary Watershed:* particularly in Imperial Valley where impairments from NPS pollution are most severe. In order of concern, pollutants include: insoluble pesticides; soluble pesticides; total dissolved solids (salts); phosphates; selenium; nitrates, and BOD.

- *Protection of Coachella Valley Ground water (Salton Sea Transboundary Watershed):* control volatile organic compounds, petroleum hydrocarbons (particularly BTEX and MTBE), and nitrates.

- *Regional Compliance Assurance and Enforcement*

- *Protection of Desert Hot Springs and Mission Springs Aquifers (Salton Sea Transboundary Watershed):* control nitrates and TDS.

- *Stakeholder Outreach and Education*: an essential activity for the success of the State WMI.

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